A POSITIVE OR NEGATIVE FORCE FOR DEMOCRACY: THE TECHNOLOGY INSTRUCTIONAL PARADOX

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Over the past two decades the technology "revolution" has evolved to touch nearly every aspect of our lives. From the time we get up in the morning and use our microwave ovens to heat our coffee, till we turn in at night after watching a favorite DVD on our plasma screen video device, technology pervades nearly every facet of our culture.

More than just a convenience, this force has become a necessity throughout business, government, and education. Even as the power of technology, in terms of its intrusiveness, is under debate in many quarters[1] the steamroller of technology interdiction within educational constructs seems unabated. As Ricky Vaz notes, "technology has fundamentally changed the way students approach their assignments, interact with others, and view the world."[2] One of the most invasive forces, in terms of this effect, is the way in which technology plays a role in the types of instructional constructs, or lessons, that are used in our schools, especially in social studies classrooms.

In some instances, technology use may lead to restrictions on instructional choice. This type of teaching cycle emphasizes instructor-centered learning paradigms. Here, technology is used to deliver education that reinforces the notion of conformity while divesting the learner of the opportunity to develop critical thinking and reasoning skills that are important developmental components for preparing students to learn how to live and actively participate in a democratic society.

Fortunately this scenario has not been perpetuated in all social studies classrooms. Indeed, technology through its ability to allow access to data as well as the ability to communicate in a quick, and inexpensive, manner can extend the precepts of an open, democratic society. The use of technology in this instance enhances learning and allows students to "think with technology rather than thinking about it."[3]

The difference in how technology is applied in social studies instruction rests in the choices made while developing the intent, or meaning, of instruction. These intents form the discourse of instruction. Decisions here impact not only instructional operations but also the way in which

content is understood and applied. Each can use technology differently to reinforce its conceptual framework. Each has far reaching societal consequences. Together they rest on a continuum, noted below, that begins with little choice, in terms of learning outcomes, and ends with an expansive view of the self and instructional technology applications.

CONFORMITY—INFORMATION—REASON—INDIVIDUAL

Instruction for Conformity

The first intent on the continuum, instruction for conformity, focuses on the notion that society is superior to the individual and that the function of the school is to prepare individuals to fit into society by conforming to the rules of that society. Here, classroom interactions concentrate on defining the rules. The ways and means of conforming to the rules are taught indirectly as well as directly. The behavior of the student, in this view, is governed by the rules of the society and how he/she is deemed good to the degree to which he/she follows those rules.

The supporters of this view argue that humans are governable by forces external to them.[4] The most ardent supporters of the view say that humans seek authority above all else. The proponents of this view would also note that the individual and the society both need a firm set of rules that provide stability for behavior. "Children feel better when they know what the rules are," say these people. "What is it that you want me to do on this assignment?" say the students. Through it all, runs the feeling that the student enters the portals of learning with the feeling "I am but the clay, mold me!"[5] Getting the "correct" answer, therefore, is the object of instruction.

The roots of the idea of instruction for conformity go deep into the history of the country. Early records of the Massachusetts colony reveal perhaps the ultimate in conformity in what was called the "filial disobedience law" that allowed for young people who did not obey their elders to be put to death.[6]

Instruction for conformity takes a number of forms in the school. Many maintain that the school is a separate sub-culture and has its own not-very-subtle form of institutional press that forces conformity on the students.[7] For instance, a stranger walking down the halls of most schools observing student clothes would be rather certain that someone has issued uniforms to the students. Somehow even the casual becomes uniform, and some kind of absurdity is reached when torn blue jeans become more expensive than new ones.

Any institution can force individuals into patterns of conforming behavior. Perhaps it must, if it is to survive. This supremacy of the group to the individual is the essence of this idea. In this construct, technology

is used to reinforce society's norms. In this context, the curriculum is proscribed through a series of rules imbedded in the lessons themselves. Learning is measured via response to a preset notion of the minimal knowledge needed to move on to the next level of instruction. Very little choice, by student or teacher, in terms of curriculum or measurement of acquired knowledge, is involved.

This intent uses technology to obtain answers that are predetermined or, at best, guided. Differential instructional modes available through technology are not extensively used in this paradigm. Control of both the content and technological applications thus rests with the instructor.

Instruction for Information

Moving along the continuum away from the end that serves society by the search for conformity, we come upon the search for information. Within this context, the function of the school is to dispense information and to teach the student how to process information. In this sense the word "information" takes on a different meaning from the generally accepted idea that it is verbally conveyed facts. Here, information means any impulse received by the human body.

The argument for this intent runs something like this. The human brain is rather analogous to a computer. It is composed of billions of cells, each of which can be programmed. Each impulse accepted by the five senses is received in the brain and transformed to some form understandable by the mechanism and then evaluated. If it is old information, the brain reinforces the programs established. If new, then new programs are entered in un-programmed cells. Brain mappers calculate that even the most intellectually sophisticated human uses less than 10 percent of the available cells and, consequently, the potential for education is almost limitless.[8]

The skill taught as part of this intent is that of data processing—how to handle efficiently that vast body of impulses which the human absorbs daily. Along with this skill is, of course, an input of information in the way of acts, both verbally and by other media. To give anything more than unvalued information is immoral, according to this view. The individual here has a right to his or her own life and values. Teaching more than information would mean interference in that right.

Technology has made instruction for information more appealing and more attainable. Information systems design—a whole schema based on these precepts—has developed around this idea. This notion, using the computer and other forms of technology as a tool, has contributed much to the world. However, one development, the use and capacity of technology as means of storing data about individuals, has made many wary.[9] The use of large-scale databases, resting in both the private and

public sectors, has left many questioning how information is collected as well as used.

The argument for this intent of instruction is based on the idea that humans are an information system, receiving and processing information constantly as their sensory mechanisms probe their surroundings. It is only sensible and proper, then, that education and instruction follow this pattern. If a human is an information system, one should be taught to process data and be given the data to process. Within this structure, the manner in which students in social studies classrooms are taught to obtain and use data is of paramount importance.

Ideally, as this intent is applied in social studies classrooms, the issues surrounding data collection and its uses will also be introduced. Concepts, such as the use of digital dossiers, new conceptions of privacy, and the intrusion of both public and private data networks in our society,[10] need to be part of classroom activities if students are to understand the implications of this type of instruction.

Instruction for Reason

Instruction for reason, next on the continuum, is a creative act of relating new information to old information and creating new ideas. Of course, "old" and "new" in this sense are relative terms. At times it is relative to humankind as a whole and, most often for schooling, "new" is relative to the individual.

The argument for this point of view rests on the idea of the human as a thinking, creative person with an intellect capable of rational thought. This rationality produces knowledge that has internal structures that can communicate meaning and that can be learned.

These structures have a discipline to them that provide bounds and symmetry. When this predicted symmetry does not come to pass in the building of a structure, the unexpected often produces laughter. That which doesn't fit is termed ludicrous and is often laughed at. If wisdom and the vision of human folly is at hand it is laughed with.

To proponents of this idea, the act of reasoning is built on the structures of knowledge. The first to associate the notion of structures to instruction was Jerome Bruner in his seminal volume *The Process of Education*.[11] In this short book, which has had a great effect on educational thought, the concept of structure in knowledge is examined.

Defining this concept, Bruner stated, "grasping the structure of a subject is understanding it in a way that permits many other things to be related to it meaningfully. To learn structure, in short, is to learn how things are related."[12] Bruner also stated flatly that "the structure of knowledge—its connectedness and the derivations that make one idea follow from another—is the proper emphasis in education."[13]

Marshall McLuhan in his two books, *The Gutenberg Galaxy*[14] and *Understanding Media*,[15] adapted Bruner's ideas by hypothesizing that, while our conscious attention is on the content of knowledge, we also accept, and to him docilely, the impact of the media that carries the content. It was his point that for several generations, knowledge and information had been in a linear, sequential pattern forced by the media of the printed word, frozen into lines of words by Guttenberg's invention.

In the present day, the impact of media and technology is of a much greater complexity than McLuhan noted, given the variety of technology applications now available. The instantaneous availability of information through the Internet, the development of digitized data collections, and tools for individual editing and text management were not envisioned forty years ago.

Technology now allows broad applications in the development of reasoning skills and understanding of the nature of knowledge. Social studies instructors using this form of learning can facilitate a transition from novice to expert through more active and inquiry-based learning allowing students to navigate their way through new spaces and ideas.[16] This intent allows the learner to both explore alternative educational paths as well as to examine issues surrounding them.

Instruction and the Individual

Moving along the continuum, instruction and the individual centers on the notion that the ultimate purpose of the school and instruction is to provide an environment for the development of the potential of the individual. The psychologist, Abraham Maslow,[17] defined this process of self-actualization with the words, "What a man can be he must be, the tendency to become actualized in what he is potentially to become everything that one is capable of becoming." This process expands instruction for the self to a process of actual development of the self. It is more than finding oneself in school; the search for the self is an active process of development towards the potential in each individual.

This act is as complicated as it is laudable. It is more than a cognitive act of insight, it is more than skill; it involves the emotions, the will, the values of the students to a far greater degree than the other intents.

The argument for the adoption of this intent is based on the view that a human is an integrated being with all of his or her facets affecting all other facets, in a Gestalt that is so inter-related as to be practically indissoluble. If a human is whole, one should be treated as a whole. This intent is based on the idea that one is free to follow the dictates of his or her own conscience. One seeks acceptance of one's self on one's own standards rather than acceptance by others on theirs.

This type of instruction empowers students to seek alternative solu-

tions to problems. It encourages diverse thought and allows for not just finding the correct answer but also in asking the right question. At its best, the marriage of technology with this type of instruction provides social studies instructors with mechanisms by which their students can access information and collaborate effectively, by empowering them with the power of choice and reason. It encourages intensive investigation of problems and allows students to come to differential solutions to common problems.

Concluding Thoughts

As is often the case in education, instruction is not tidy and systematic. The intents of instruction described above are not perfectly categorical and mutually exclusive. Precise lines cannot be drawn between them, as these intents are not all inclusive. An instructional system, however, cannot just wander without a general purpose or direction. To be without purpose is to be stuck, as idle as a painted ship upon a painted ocean.

In the case of the social studies, the general intents of instruction should include "experiences that provide for the study of the ideals, principles, and practices in a democratic republic."[18] With the interdiction of technology in social studies classrooms, technology can provide a capacity for empowerment and knowledge for both teachers and students[19] that can further these ideals. However, in trying to attain the objective of applying technology to instruction, especially in social studies classes, one is caught between the institutionalizing effects of learning rather than self-knowledge outcomes.[20]

In preparing today's students for the type of society they will enter, using technological applications to instruct students for conformity, information, reason, and self has a place in the social studies classroom, depending on the content and purposes of the lesson. As George and Nancy Brownlee[21] aptly state, "Information is the vital component of a participatory and representative democracy. In the 21st century, ignoring the education of children in accessing, analyzing, evaluating and producing media messages and in understanding the systems that bring us media messages, deprives our students of the very tools they need to function as citizens and to live a fruitful, rewarding personal and life work." They go on to note, "A choice to include meaning, questioning, critical awareness, and critical thinking skills in the story of technology in education is a choice that presents technology, democracy, and the schools as friends to each other." This concept is at the heart of the technology instructional paradox; namely how can we apply technology to best serve education in a democratic society.

As the imposition of technology expands within our country this issue needs to be one of the pillars of social studies and citizenship educa-

tion. The mere use of technology to retrieve information, answer questions, or discuss issues is no longer enough. Students need to understand the effects of technology in their daily lives and what it will mean to them and their children. Twenty-first century citizens deserve no less from their schools.

NOTES

1. Daniel Solove, *The Digital Person* (New York: New York University Press, 2004).

2. Ricky Vaz, "The Promise of Computer Literacy," *Liberal Education* 90, no. 4 (Fall, 2004): 2-5.

3. S. C. Ehrmann, "Beyond Computer Literacy: Implications of Technology for the Content of a College Education," *Liberal Education* 90, no. 4 (Fall 2004): 6-13.

4. John E. Searles, "Information Technology and the Social Studies," *Social Education* 47, no. 5 (May 1983): 45-47.

5. Ibid.

6. Howard Zinn, *A People's History of the United States* (New York: Perennial Press, 2003).

7. Robert Pirsig, *Zen and the Art of Motorcycle Maintenance* (New York: Vantage Press, 2001).

8. Arthur W. Toga and John C. Mazziotta, *Brain Mapping: The Methods*, 2nd ed. (New York: Academic Press, 2002).

9. Solove, *The Digital Person*.

10. Ibid.

11. Jerome K. Bruner, *The Process of Education* (Cambridge, Mass.: Harvard University Press, 1960).

12. Ibid.

13. Jerome K. Bruner, *Towards a Theory of Instruction* (Cambridge, Mass.: Belknap Press, 1966).

14. Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (New York: Vintage Press, 1962).

15. Marshall McLuhan and Louis Lapham, *Understanding Media* (New York: Random House, 1964).

16. Ehrmann, "Beyond Computer Literacy."

17. Abraham Maslow, *Toward a Psychology of Being*, 3rd ed. (New York: Wiley, 1998).

18. National Council for the Social Studies, *Curriculum Standards for Social Studies: Expectations for Excellence* (Washington, D.C: National Council for the Social Studies, 1994).

19. Vaz, "The Promise of Computer Literacy."

20. John Kitterman, "Turn On, Tune In, 'Dropout,'" *The Chronicle of Higher Education,* March 18, 2005, 46-48.

21. George Brownell and Nancy Brownell, "Technology, Democracy and the Schools: Friends or Foes?" http://www.nssa.us/nssaajrnl/201/html/Brownell.htm, 1-8.